

**IN THE CLAIMS:**

**Amendments to the Claims**

Please amend claims 8 and 10 and add the new claim as shown below.

**Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-6 (canceled)

7. (previously presented) In a plasma processing apparatus in which a wafer is mounted on an upper member of a stage disposed within a vacuum chamber, the stage including a cooling jacket with a path disposed at an interior thereof for passing coolant liquid therethrough and the upper member being attached on the cooling jacket, the upper member including a heater and an electrode for an electrostatic chuck being disposed at an interior thereof, wherein the wafer is mounted on the upper member of the stage and processed by using plasma formed in the vacuum chamber above the stage, comprising:

surfaces of the cooling jacket and the upper member delimiting a gap therebetween which is sealed; and

a valve for adjusting a pressure of a space within the gap to be at a vacuum condition while the wafer is placed on the upper member of the stage.

8. (currently amended) A plasma processing apparatus according to claim 7, ~~further comprising a member which is wherein~~ at least a portion of the cooling jacket which is disposed so as to oppose a portion of the upper member through the gap is subjected to one of mirror surface machining and plating treatment-being disposed at an outer periphery of the upper member.

9. (previously presented) In a plasma processing apparatus in which a wafer is mounted on an upper member of a stage disposed within a vacuum chamber, the stage including a cooling jacket with a path disposed at an interior thereof for passing coolant liquid therethrough and the upper member being attached on the cooling jacket, the upper member including a heater and an electrode for an electrostatic chuck being disposed at an interior thereof, wherein the wafer is mounted on the upper member of the stage and processed by using plasma formed in the vacuum chamber above the stage, comprising:

surfaces of the cooling jacket and the upper member delimiting a gap therebetween which is sealed; and

a portion disposed on a surface of the cooling jacket so as to oppose the upper member through the gap, the portion being subjected to one of mirror surface machining and plating treatment.

10. (currently amended) A plasma processing apparatus according to claim 9, further comprising a member which is disposed at an outer periphery of the upper member so as to oppose the upper member, at least a portion of a surface of the member which opposes the upper member being subjected to one of mirror surface machining and plating treatment ~~being disposed at an outer periphery of the upper member.~~

11. (new) A plasma processing apparatus according to claim 7, further comprising a member which is disposed at an outer periphery of the upper member so as to oppose the upper member, at least a portion of the surface of the member opposing the upper member being subjected to one of mirror surface machining and plating treatment.